

**REMARKS**

Applicant respectfully requests entry of amendments to claims 1, 7, 8, 10, 17, and 20, cancellation of claim 19, and withdrawal of claims 9, 12, and 21, without prejudice or disclaimer.

Support for the amendments can be found throughout the specification and the originally filed claims and, therefore, do not add new matter.

Applicant submits that pending claims 1-8, 10, 11, 13-18, and 20 are in condition for allowance, and respectfully requests that the claims as amended be entered.

**Rejection Under 35 U.S.C. §112, Second Paragraph**

Claims 1-8, 10, 11, and 13-16 stand rejected under 35 U.S.C. §112, second paragraph, as allegedly being indefinite.

Applicant traverses the rejection as it might apply to the amended claims, including claims dependent therefrom, for the reasons given below.

Claim 1-8 are alleged to be indefinite for not referring to specific elements. While Applicant does not acquiesce to the reasoning offered in the Action, in order to expedite prosecution towards allowance, the claims have been amended to recite positive process steps which specifically refer to LOI and how LOI is determined.

Claims 10, 11 and 13-16 are alleged to be indefinite for not reciting steps that refer to specific elements. While Applicant does not acquiesce to the reasoning offered in the Action, in order to expedite prosecution towards allowance, the claims have been amended to recite positive process steps which specifically refer cancer and how the cancer is determined.

For these reasons, Applicant respectfully requests that the rejection be withdrawn.

**Rejections Under 35 U.S.C. §102**

Claims 1-4, 10, 13-17, 19, and 20 stand rejected under 35 U.S.C. §102(b), as allegedly being anticipated by Ahomadegbe et al.

Applicant traverses the rejection as it might apply to the amended claims, including claims dependent therefrom, for the reasons given below. As claim 19 has been canceled, the rejection as applied to this claim is rendered moot.

The Office Action alleges, in pertinent part, that the cited reference teaches the elements as recited in the claims, suggesting that as Ahomadegbe et al. teach detection of hypomethylation in breast carcinoma, and as the claims have been interpreted to embrace "single nucleotides," the reference anticipates the claimed invention.

As stated in Hybritech Inc. v. Monoclonal Antibody, Inc., 231 U.S.P.Q. 81 (Fed. Cir. 1986), "It is axiomatic that for prior art to anticipate under 102 it has to meet every element of the claimed invention." Further, the reference must be enabling (see, e.g., Chester v. Miller, 15 U.S.P.Q.2d 1333 (Fed. Cir. 1990)).

Applicant submits (and as the Action expressly admits) that the teachings of Ahomadegbe et al. are limited to breast cancer; i.e., the cited reference is silent with respect to colorectal cancer. The present claims expressly recite "[a] method for identifying loss of imprinting (LOI) of the IGF2 gene in a subject with colorectal cancer," including analyzing such subjects for hypomethylation/LOI status, which is not taught or suggested by the cited reference. Further, as Ahomadegbe et al. is silent with respect to colorectal cancer, the cited reference provides no enabling disclosure as to how to practice the invention as claimed.

Therefore, because the instant claims recite analyzing subjects with colorectal cancer, which subjects are not taught or suggested by Ahomadegbe et al., the cited reference does not anticipate the claimed invention.

Failure of the prior art to meet every element of the claimed invention does not meet the standard under §102. For these reasons, Applicant respectfully requests that the rejection be withdrawn.

Claim 5 stands rejected under 35 U.S.C. §102(b), as allegedly being anticipated by Ahomadegbe et al., as evidenced by Moore.

Applicant traverses the rejection as it might apply to the amended claims, including claims dependent therefrom, for the reasons given below.

The Office Action alleges, in pertinent part, that the cited reference teaches the elements as recited in the claims, suggesting that as Ahomadegbe et al. teach detection of hypomethylation in breast carcinoma, the reference anticipates the claimed invention, including that Moore teaches that exon 3 of the human IGF2 gene which is identical to SEQ ID NO:1, where the combined references teach the methods as claimed.

Again, as stated in Hybritech Inc. v. Monoclonal Antibody, Inc., 231 U.S.P.Q. 81 (Fed. Cir. 1986), "It is axiomatic that for prior art to anticipate under 102 it has to meet every element of the claimed invention," including that the reference must be enabling (see, e.g., Chester v. Miller, 15 U.S.P.Q.2d 1333 (Fed. Cir. 1990)).

As stated above, the teachings of Ahomadegbe et al. are limited to breast cancer, and Moore does not establish that Ahomadegbe et al. teach or suggest the detection of hypomethylation/LOI in colorectal cancer.

To reiterate, the present claims expressly recite "[a] method for identifying loss of imprinting (LOI) of the IGF2 gene in a subject with colorectal cancer," including analyzing such subjects for hypomethylation/LOI status, which is not taught or suggested by Ahomadegbe et al. alone or in combination with Moore.

Therefore, because the instant claims recite analyzing subjects with colorectal cancer, which subjects are not taught or suggested by Ahomadegbe et al., and as such subjects are not enabled by the teachings of Moore, Ahomadegbe et al. alone, or in combination with Moore, does not anticipate the claimed invention.

Failure of the prior art to meet every element of the claimed invention does not meet the standard under §102. For these reasons, Applicant respectfully requests that the rejection be withdrawn.

Claim 6 stands rejected under 35 U.S.C. §102(b), as allegedly being anticipated by Ahomadegbe et al., as evidenced by Ishihara et al.

Applicant traverses the rejection as it might apply to the amended claims, including claims dependent therefrom, for the reasons given below.

The Office Action alleges, in pertinent part, that the cited reference teaches the elements as recited in the claims, suggesting that as Ahomadegbe et al. teach detection of hypomethylation in breast carcinoma, the reference anticipates the claimed invention, and that Ishihara et al. teaches that human H-19 gene is identical to SEQ ID NO:6, where the combined references teach the methods as claimed.

Again, as stated in Hybritech Inc. v. Monoclonal Antibody, Inc., 231 U.S.P.Q. 81 (Fed. Cir. 1986), "It is axiomatic that for prior art to anticipate under 102 it has to meet every element of the claimed invention," including that the reference must be enabling (see, e.g., Chester v. Miller, 15 U.S.P.Q.2d 1333 (Fed. Cir. 1990)).

As stated above, the teachings of Ahomadegbe et al. are limited to breast cancer, and Ishihara et al. does not establish that Ahomadegbe et al. teach or suggest the detection of hypomethylation/LOI in colorectal cancer.

To reiterate, the present claims expressly recite "[a] method for identifying loss of imprinting (LOI) of the IGF2 gene in a subject with colorectal cancer," including analyzing such subjects for hypomethylation/LOI status, which is not taught or suggested by the Ahomadegbe et al. alone or in combination with Ishihara et al.

Therefore, because the instant claims recite analyzing subjects with colorectal cancer, which subjects are not taught or suggested by Ahomadegbe et al., and as such subjects are not enabled by the teachings of Ishihara et al., Ahomadegbe et al. alone, or in combination with Ishihara et al., do not anticipate the claimed invention.

Failure of the prior art to meet every element of the claimed invention does not meet the standard under §102. For these reasons, Applicant respectfully requests that the rejection be withdrawn.

Claims 17 and 18 stand rejected under 35 U.S.C. §102(b), as allegedly being anticipated by Cui et al.

Applicant traverses the rejection as it might apply to the amended claims, including claims dependent therefrom, for the reasons given below.

The Office Action alleges, in pertinent part, that the cited reference teaches the elements as recited in the claims.

As stated in Hybritech Inc. v. Monoclonal Antibody, Inc., 231 U.S.P.Q. 81 (Fed. Cir. 1986), "It is axiomatic that for prior art to anticipate under 102 it has to meet every element of the claimed invention."

Cui et al. teach that loss of imprinting is determined by analyzing RNA samples (see, p. 1279, last paragraph, "**Quantitative analysis of IGF2 imprinting status**"), including that genomic DNA was removed by DNase (Id.). The claims as presently recited expressly state that the analysis is carried out with genomic DNA.

Therefore, because the instant claims recite the use of genomic DNA as a positive process step, which is not taught or suggested by Cui et al., the reference does not anticipate the claimed invention.

Failure of the prior art to meet every element of the claimed invention does not meet the standard under §102. For these reasons, Applicant respectfully requests that the rejection be withdrawn.

### **Rejections Under 35 U.S.C. §103**

Claim 7 stands rejected under 35 U.S.C. §103(a), as allegedly being unpatentable over Ahomadegbe et al. in view of Takei et al.

Applicant traverses the rejection as it might apply to the amended claim, including claims dependent therefrom, for the reasons given below.

Applicant submits that because the cited references do not teach all the claim limitations, one of skill in the art would not be motivated to combine the reference teachings.

The Office Action alleges, in pertinent part, that Ahomadegbe et al. is silent with respect to teaching the analysis of an H19 gene DMR that comprises a CTCF binding site. The Action then provides Takei et al. to cure the deficiency identified in the primary reference, stating that the secondary reference teaches hypomethylation of one site, which is alleged to be associated with human bladder cancer. However, Takei et al. do not teach hypomethylation of CTCF-binding sites associated with colorectal cancer, nor the sequences for the CTCF-site as recited in the present claim.

Because the teachings of Ahomadegbe et al. would not result in the combination of positive process steps as recited in claim 7 when combined with the teachings of Takei et al., one of skill in the art would not have an expectation of success since the invention as claimed would not be achieved in view of such teachings. Therefore, one of skill in the art would not be motivated to combine such teachings.

It is axiomatic that one cannot simply use the Applicant's disclosure as a "blueprint" to reconstruct, by hindsight, Applicant's claim. See, e.g., Interconnect Planning Corp. v. Feil, 774 F.2d 1132, 227 U.S.P.Q. 543 (Fed. Cir. 1985). Because there is neither the suggestion nor expectation of success that can be found in the cited art, no *prima facie* case of obviousness has been established.

Applicant submits that because there is no reasonable expectation of successfully achieving the invention as claimed, there is no motivation to combine the cited references, thus, no *prima facie* case for obviousness exists. For these reasons, Applicant respectfully requests that the rejection, including as it might be applied against the amended claims, be withdrawn.

Claim 8 stands rejected under 35 U.S.C. §103(a), as allegedly being unpatentable over Ahomadegbe et al. in view of Cui et al.

Applicant traverses the rejection as it might apply to the amended claim for the reasons given below.

Applicant submits that because the cited references do not teach all the claim limitations, one of skill in the art would not be motivated to combine the reference teachings.

The Office Action alleges, in pertinent part, that Ahomadegbe et al. is silent with respect to teaching "what particular methods were used to detect[sic] methylation status of these genes." The Action then provides Cui et al. to cure the deficiency identified in the primary reference, stating that the secondary reference teaches the primers as claimed. However, Cui et al. do not teach a primer pair comprising SEQ ID NO:23 and SEQ ID NO:24, elements as presently recited in the claim.

Because the teachings of Ahomadegbe et al. would not provide the sequence elements as presently recited in claim 8 when combined with the teachings of Cui et al., one of skill in the art would not have an expectation of success since the invention as claimed would not be achieved in view of such teachings. Therefore, one of skill in the art would not be motivated to combine such teachings.

It is axiomatic that one cannot simply use the Applicant's disclosure as a "blueprint" to reconstruct, by hindsight, Applicant's claim. See, e.g., Interconnect Planning Corp. v. Feil, 774 F.2d 1132, 227 U.S.P.Q. 543 (Fed. Cir. 1985). Because there is neither the suggestion nor expectation of success that can be found in the cited art, no *prima facie* case of obviousness has been established.

Applicant submits that because there is no reasonable expectation of successfully achieving the invention as claimed, there is no motivation to combine the cited references, thus, no *prima facie* case for obviousness exists. For these reasons, Applicant respectfully requests that the rejection, including as it might be applied against the amended claims, be withdrawn.

#### **Rejection Under the Judicially Created Doctrine of Obviousness-Type Double Patenting**

Claims 17 and 18 stand provisionally rejected under the judicially created doctrine of obviousness double patenting allegedly over claims 1-14, 16-20, and 23-42 of co-pending U.S. Application Ser. No. 10/336,552.

While not acquiescing to the reasoning offered in the Office Action, and to expedite prosecution toward allowance, Applicant has provided herein a Terminal Disclaimer in compliance with 37 C.F.R. §1.321(c).

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For this reason, Applicant respectfully requests that the rejection against claims 17 and 18 be withdrawn.



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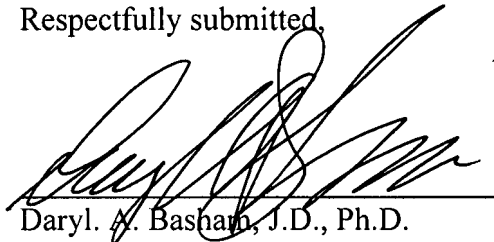
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Attorney Docket No. JHU1900-1

**Conclusion**

Applicant submits that pending claims 1-8, 10, 11, 13-18, and 20 are in condition for allowance. The Examiner is invited to contact Applicant's undersigned representative if there are any questions relating to this submission.

A check in the amount of \$290.00 is enclosed to cover a Two Month Petition for Extension of Time fee (\$225.00) and a Terminal Disclaimer fee (\$65.00). The Commissioner is hereby authorized to charge any additional fees required by this submission, or make any credits or overpayments, to Deposit Account No. 07-1896 referencing the above-identified attorney docket number. A copy of the Transmittal Sheet is enclosed.

Respectfully submitted,



Daryl A. Basham, J.D., Ph.D.  
Registration No. 45,869  
Telephone: (858) 677-1429  
Facsimile: (858) 677-1465

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DLA Piper US LLP  
4365 Executive Drive, Suite 1100  
San Diego, California 92121-2133  
**USPTO Customer Number 28213**